

Comments and Response

1. Applicant was duly advised by the Examiner in the above referenced **May 7, 2002** office action that:

- a) the claim for priority under 35 U.S.C. §119 is acknowledged and that certified copies of priority documents have been received and are now of record and that the Information Disclosure Statement filed on 2/21/02 has been received;
- b) the disclosure is objected to because of informalities requiring correction;
- c) Claims 1, 4, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Strobl (U.S. Patent No. 5,360,274);
- d) Claims 1, 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Winkelmann (U.S. Patent No. 3,770,990); and
- e) Claims 2, 3, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strobl (U.S. Patent No. 5,360,274) in view of Rose (U.S. Patent No. 3,239,287).

2. In view of the comments below applicant respectively requests that the examiner reconsider the present application including rejected claims 1-8 and the objection to the specification. No new matter has been added with any of the amendments to the specification. In compliance with 37 C.F.R. §1.121 and for the Examiner's convenience the Applicant has enclosed herewith a copy of the amended paragraph showing any material added or deleted.

- a) Applicant notes with appreciation the acknowledgment of the claim to priority under §119 and that the priority documents are now of record. Applicant further notes with appreciation that the examiner has returned an initialed form 1449.
- b) The disclosure has been objected to because of informalities that required correction. The typo in the paragraph on page 5 beginning at line 24, the typo at line 27, has been corrected by the above amendment to that paragraph. Thus applicant respectfully submits that this objection has been traversed and respectfully requests that the examiner reconsider and withdraw this objection.
- c) Claims 1, 4, and 5 stand rejected under 35 U.S.C. 102(b) as being anticipated by Strobl (U.S. Patent No. 5,360,274). The Examiner maintains that this reference shows the limitations recited by these claims, referring to figure 1 and the spherical shaped bearing 1, the outer annular portion 19 as the claimed first member and convergent end 7 as the claimed second member. Applicant respectfully disagrees with the Examiner's construction of the Strobl reference.

Claim 1 recites in addition to the bearing with an outer spherical shaped surface, "first and second members having holding surfaces which extend axially in opposite directions to each other and between which the bearing is sandwiched, each of the holding surfaces being tapered axially to expand straight toward the opposing holding surface."

Each of the holding surfaces of the first and second members (end plate and holding plate) defined in claims 1 is in a line contact with the spherical surface so that contact resistance between the holding surfaces and the spherical surface is smaller. Accordingly, the self-aligning adjustment of the bearing is easily performed. Further, the first and second members can be manufactured at a lower cost, as described in the specification of this application, since the holding surfaces are straight tapered surfaces.

In stark contrast the first and second members (end plate or convergent end 7 and holding plate or retainer 9 with annular portion 19 and fingers 10) disclosed in Strobl do not have the holding surfaces each being tapered axially to expand straight toward the opposing holding surface as defined in independent claim 1. The holding surface (fingers 10) of the retainer 9 (one of the first and second members) of Strobl has a tip portion whose shape is formed along a spherical surface 3 of the bearing 1, as clearly shown in Figs. 1, 3, and 4.

For these reasons applicant respectfully submits that the Strobl reference does not show or suggest all limitations of independent claim 1 or dependent claims 4 and 5 and thus does not properly support a rejection of these claims under 35 U.S.C. §102(b). Therefore applicant respectfully requests that the examiner reconsider and withdraw this rejection of claims 1, 4, and 5 based on the Strobl reference.

d) Claims 1, 4-6 stand rejected under 35 U.S.C. 102(b) as being anticipated by Winkelmann (U.S. Patent No. 3,770,990). The Examiner alleges that Winkelmann shows the limitations recited by these claims, referring to figure 1-5 and the spherical shaped bearing 57, retainer ring 44 with fingers 48 as the claimed first member and retainer ring 44 with fingers 48 as the claimed second member. Applicant respectfully disagrees with the Examiner's construction of the Winkelmann reference.

As noted above and repeated in part here for the Examiner's convenience: Claim 1 recites in addition to the bearing with an outer spherical shaped surface, "first and second members having holding surfaces which extend axially in opposite directions to each other and between which the bearing is sandwiched, each of the holding surfaces being tapered axially to expand straight toward the opposing holding surface." The same limitation is recited by claim 6.

Each of the holding surfaces of the first and second members (end plate and holding plate) defined in claims 1 and also 6 is in a line contact with the spherical surface so that contact resistance between the holding surfaces and the spherical surface is smaller. Accordingly, the self-aligning adjustment of the bearing is easily performed. Further, the first and second members can be manufactured at a lower cost, as described in the specification of this application, since the holding surfaces are straight tapered surfaces.

Again in stark contrast the first and second members (retainer means 34 including two retainer rings 44 with fingers 48) disclosed in Winkelmann do not

have the holding surfaces each being tapered axially to expand straight toward the opposing holding surface as defined in claims 1 and 6. Each of the fingers 48 of the retaining means 34 of Winkelmann has an arcuately formed tip portion 52 which defines a bearing cage for the bearing 30, as described at column 3, lines 20 - 24. That is, the holding surfaces of the fingers 10 or 48 are not substantially in a line contact with the spherical surface, but in a surface contact therewith.

For these reasons applicant respectfully submits that the Winkelmann reference does not show or suggest all limitations of independent claim 1 or 6 or dependent claims 4 - 5 and thus does not properly support a rejection of these claims under 35 U.S.C. §102(b). Therefore applicant respectfully requests that the examiner reconsider and withdraw this rejection of claims 1, 4, 5, and 6 based on the Windelmann reference.

e) Claims 2, 3, 7, and 8 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Strobl (U.S. Patent No. 5,360,274) in view of Rose (U.S. Patent No. 3,239,287). Applicant respectfully notes that these claims are dependent, respectively, on claims 1 or 6 and thus by dependency and for the reasons noted above should be deemed allowable over the cited references as the limitations of claims 1 or 6 are not taught or suggested by Rose whether taken alone or together with the references noted above.

Additionally the Examiner notes that Strobl does not disclose the use of an aperture and a projection that is plastically deformed to connect both plates. The Examiner next alleges that Rose shows the use of an aperture and projection which is plastically deformed to connect both plates (referring to figure 1 and 2, aperture 48, and projection 42). Applicant respectfully submits that Rose does not teach or suggest whether taken alone or together with Strobl the limitations recited by claims 2 or 7 and thus 3 and 8 by respective dependency.

Claim 2 recites a bearing holding structure according to claim 1, wherein the first and second members have fixing surfaces which extend radially from the holding surfaces, respectively, and allow a radial and relative movement for adjusting an axial alignment among the first and second members and the bearing, when the fixing surfaces come in contact with each other in advance for sandwiching the bearing between the holding surfaces, and then, (emphasis added) are fixed to each other to inhibit the radial and relative movement so that first and second members rigidly hold the bearing.

Rose discloses fingers 42 fixed to the holes 48 by snap engagement. However, Rose in marked contrast to the claimed limitation does not have fixing surfaces which allow a radial and relative movement when the fixing surfaces come in contact with each other and, after adjusting an axial alignment among the first and second members and the bearing, are fixed to each other, as required by claims 2 and 7. When the fixing surfaces of Rose, which are a surface of the feet


32 and a surface of the bearing plate 16, come in contact with each other, the fixing surfaces are fixed to each other at the same time in such a manner that the fingers 42 snap back toward each other that the portions 42c thereof engage the under surface of the bearing plate 16 to securely lock the assembly of the bearing member 12 and the bracket 14 on the plate 16, as described from columns 3, line 74 to column 4, line 3. According to Rose, unless the holes 48, the fingers 42, the holes 46 and the collar 36 are positioned with accurate dimensional relationship as to distances from a center axis of the bearing 12, the bearing 12 tends to be distorted or strained by the collar 36 whose position is offset from the center axis of the bearing 12.

For these reasons Applicant respectfully submits that the Stobl and Rose reference taken alone or together do not show or suggest all the limitations of claim 2 or 7 or claims 3 or 8 respectively dependent thereon and thus does not properly support a rejection of these claims under 35 U.S.C. §103(a). Therefore applicant respectfully requests that the examiner reconsider and withdraw this rejection of claims 2, 3, 7, and 8 based on the Stobl and Rose reference.

Accordingly, Applicant respectfully submits that the claims, as amended, clearly and patentably distinguish over the cited references of record and as such are to be deemed allowable. Such allowance is hereby earnestly and respectfully solicited at an early date. If the Examiner has any suggestions or comments or questions, calls are welcomed at the phone number below.

Although it is not anticipated that any fees are due or payable, the Commissioner is hereby authorized to charge any fees that may be required to Deposit Account No. 50-1147.

Respectfully submitted,



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